422281

ORIGINAL (Red)

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL
DIVISION OF AIR AND WASTE MANAGEMENT
391 LUKENS DRIVE
NEW CASTLE, DELAWARE 19720-2774

WASTE MANAGEMENT SECTION
SITE INVESTIGATION &
RESTORATION BRANCH

TELEPHONE: (302) 395-2600
FAX: (302) 395-2601

May 6, 1999

William Wentworth (3HW30)
Site Assessment Manager
US EPA, Region III
1650 Arch St
Philadelphia, PA 19103-2029

RE: **Preliminary Assessment for Arlon, Inc., Bear, Delaware**
RCRA Facility # DED980551261

Dear Mr. Wentworth:

Enclosed is a final Preliminary Assessment Report for the above-named site.

Feel free to call me at (302) 395-2618 should you have any questions about this matter.

Sincerely,

Karissa D. Hendershot

Karissa D. Hendershot
Environmental Scientist

KDH:hlb
Kdh99024.doc
DE-289 II A2

Enclosure

pc: N. V. Raman, Environmental Program Manager II
Karl F. Kalbacher, Environmental Program Manager I

PRELIMINARY ASSESSMENT
FOR
ARLON, INC.
RCRA FACILITY # DED980551261
BEAR, DELAWARE

DNREC Project DE-289
March 1999

Prepared by:
Karissa D. Hendershot
Environmental Scientist
Site Investigation and
Restoration Branch
391 Lukens Drive
New Castle, Delaware 19720

Reviewed by:
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Environmental Program Manager
Site Investigation and
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391 Lukens Drive
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TABLE OF CONTENTS

1 INTRODUCTION

The Delaware Department of Natural Resources and Environmental Control (DNREC), Site Investigation and Restoration Branch (SIRB), in cooperation with the United States Environmental Protection Agency (EPA), conducted a Preliminary Assessment (PA) at the Arlon, Inc. Hazardous Waste Storage Facility. The facility is regulated under the Federal Resource Conservation and Recovery Act (RCRA) Program. (Figures 1-4a, Reference 1).

The purpose of this investigation was to tour the premises and property, observe operating procedures and protocol, and determine if possible historic releases of hazardous substances have occurred.

2 BACKGROUND INFORMATION

2.1 SITE LOCATION

Arlon Inc. is located off Route 13 at 1100 Governor Lea Road, Bear, Delaware in New Castle County, north of Saint Georges, Delaware. The company is located on 32 acres at latitude 39° 36' 09" and longitude 75° 39' 42. The tax parcel numbers are 12-002.00-021 and 029 (Figure 5, Reference 2).

The property is bound by Governor Lea Road, Route 13, Route 7, and Lower Twin Lane Road. The facility is surrounded by heavy industry, residential areas, woodlands, and open lands within a two mile radius. On the Arlon property, there are woodlands to the east and south of the facility. Route 13 is .25 miles to the east. The Motiva Oil refinery (formerly Star Refinery) is located to the southeast within a two mile radius. Red Lion State Forest is located northeast of the facility within the two mile radius. Residential homes are located within 300 feet on the western side of the property along Route 7 and Governor Lea Road. There are three National Priority (NPL) Sites located within 1.5 miles of Arlon. Tybouts Landfill is one half mile to the northeast, Standard Chlorine is 1.3 miles to the east, and Delaware City PVC is 1.25 miles south of Arlon.

The 1993 climatological data available for New Castle County, Delaware reports an average yearly temperature of 54.5° F. January is the coldest month with a mean temperature of 31.3° F, and July is the warmest month with a mean temperature of 76.0° F. The average annual precipitation for the area is 42.61 inches, the net annual precipitation (mean annual precipitation minus mean annual lake evaporation) was found to be approximately 6.38 inches (References 3).

2.2 SITE DESCRIPTION

The production facility is comprised of two very large buildings. In 1992, a 72,000 square foot building was built adjacent to the existing 58,000 square foot building. The two buildings are connected by an enclosed hall combining the two buildings into one 130,000 square foot facility

which houses both divisions (Figure 4). Neither the property nor the facility are enclosed by fencing.

The land surrounding the facility is lawn, woodlands, open brush, wetlands, and the Tybouts NPL Site. Tybouts landfill is located across the street to the north. To the east is the main parking facility, lawn, brush, woods, and Doll Run. The creek is located 200 feet east of the facility in an upland wetland. The wetland is filled with marsh grasses, cat tails, skunk cabbage, and other wetland plants. There appears to be a wide flood basin associated with the creek. To the south of the facility is another wetland, approximately one acre in size, heavy brush, and hardwoods. The wetland and the creek may be hyrologicaly connected. To the west of the facility is a wood lot and residential homes along Route 7. (Photographs 1-8)

The first home is less than 300 feet from the facility building. The holding tanks for Propane, Naphtha, and Xylene are located between the residences and the west side of the facility. The 10,000 gallon Propane tank is completely fenced. The 2,000 gallon Xylene tank and the 1,000 gallon Naphtha tank are contained in a drainless concrete dam. Fencing in is the process of being installed around the two tanks. The elevation of the facility is approximately 30 feet above sea level. The slope is generally from northwest to southeast towards the Doll Run floodplain. (Figure 6, Reference 4, Photographs 1-8)

2.3 OPERATIONAL HISTORY AND WASTE CHARACTERISTICS

Arlon, formerly known as Keene Corporation, relocated to the present site in 1978. There was no previous industry on the property prior to Keene Corporation's ownership. In 1989 the company changed the name to Arlon Incorporated. Arlon is classified as a large generator holding facility (above 1,000 Kg. of hazardous waste). The hazardous waste generated is a spent etchant (Ammonium persulfate and Copper) which is classified as a corrosive (DOO2). Xylene, Naphtha, IPA, and Silicone are used to coat glass and are classified as corrosives and flammables (DOO1, FOO3 and FOO5). Xylene is stored in a 2,000 gallon tank, and the Naphtha is stored in a 1,000 gallon tank. The Xylene and Naphtha tanks are contained within drainless concrete dams outside the facility. Mineral spirits are use to clean the machines. Mineral spirits are classified as corrosives and, flammables (DOO1, FOO3). Propane is the main source of heat for the facility. It is stored in a 10,000 gallon tank outside, away from the facility.

The corrosive storage facility for storing 55 gallon drums is a approximately a 10' x 40' chain-link fence structure located adjacent to the shipping and receiving dock. The structure has a roof but is otherwise open to the weather. The flammable/explosive storage facility is a wooden storage shed 100 feet from the main building and corrosive storage facility. The floor of the shed is raised upon a spill containment unit and there is an internal sprinkler system.

Within the building is a short-term satellite accumulation storage area where less than 55 gallons of spent product accumulate before transfer to the outside holding areas.

2.4 SITE VISIT

Karissa D. Hendershot and Ann L. Breslin of the DNREC-SIRB visited the Arlon Plant on Monday March 1, 1999 with Alan Simpson from the DNREC - Hazardous Waste. Alan Simpson produced a compliance assessment report from this site visit (Appendix A). Derek Miller, the Process Engineer, conducted the tour around the plant explaining the production processes and uses of the hazardous materials. Arlon is divided into two divisions, the Silicone Technologies Division, and Materials for Electronics Division.

The Silicone Technologies Division produces silicone rubber tapes and cloth roles. Within the process of combining rubber and fiberglass cloth to produce coated stock, Xylene and Naphtha solvents are used to soften the silicone rubber. Hazardous waste from this process is generated in the mix room when excess Xylene and Naphtha are wiped up from the machinery with cloth rags and disposed of.

The Microwave Materials Division produces sheets of circuit board materials. The process involves layering Teflon impregnated fiberglass with copper and aluminum in a press operated in a vacuum environment. In the quality control process, the division uses an Ammonium persulfate solution to etch the copper of test product laminates. The spent Ammonium persulfate solution is the largest source of hazardous waste generated at Arlon.

There are small amounts of miscellaneous hazardous wastes generated in the laboratories and in the parts cleaning station located in the maintenance area of the facility.

3 GROUNDWATER PATHWAY

3.1 HYDROGEOLOGIC SETTING

The facility is located within the Coastal Plain Province. As inferred from the Geohydrology map of the Saint Georges area, the general elevation at the site is 50 feet above sea level. Cross section "B" Point Dc51-4,15 located just south of the Arlon RCRA facility indicates there is approximately 25-30 feet of quaternary age (Columbia formation and Holocene Sediments) deposits which are underlain by approximately 525 feet of Cretaceous aged (Potomac Formation) deposits. The Bedrock subcrops the Cretaceous aged deposits at a depth of 550 feet below ground level. The bedrock is comprised predominately of gneisses and schists of the Wissahickon Formation (Wg) with some layered amphibolites (Figure 7, 8, Reference 5).

3.2 GROUNDWATER TARGETS

[redacted]

[redacted]

4 SURFACE WATER PATHWAY

4.1 HYDROLOGIC SETTING

The nearest surface water body is Doll Run, a tributary of the Red Lion Creek. Doll Run is located one half mile to the east of the facility. Stream flow data is not available for Doll Run or Red Lion Creek. The gauging station on the Red Lion was abandoned prior to 1990 (Reference 7). The Red Lion Creek is a tributary of the Delaware River.

The Delaware River flow gauged at Trenton, New Jersey is 11,744 cfs (Reference 7). The Delaware River is the surface pathway for the remaining 12 miles downstream of the site. The nearest surface water intake is located on the Red Lion Creek down stream of the Site. Motiva Refinery owns the intake. There are no surface water intakes on Doll Run.

According to the National Flood Insurance Rate Map the entire site is located outside the 100 and 500 year flood zones (Figure 10, Reference 8).

4.2 SURFACE WATER TARGETS

The Delaware Heritage Program (DHP) investigated sensitive species that live in or near a surface water body that could be impacted by a hazardous release into the water from the facility. According to available information, there are no Federal or State endangered species onsite. In addition, there are no federally endangered species within 15 mile distance but there are several state ranked species of concern. Species within a 5 mile radius include the entire Heronry on Pea Patch Island because these birds are at the northern extent of their breeding grounds and the Bur Marigold (*Bidens bidentoides*) which is state ranked S1 meaning they are extremely rare within the state. Within the 5 to 10 mile radius are two species of concern, the Hickory shad ranked S2 (Very rare within the state typically 6-20 known occurrences in the state) and the Slough cordgrass ranked S1.1 (they are extremely rare within the state, typically less than 5 known occurrences), (Reference 9).

Several wetlands are located along Doll Run, Red Lion Creek and the Delaware River (Figure 11, Reference 10).

5 SOIL AND AIR PATHWAY

5.1 PHYSICAL CONDITIONS

According to the Soil Survey of New Castle County, Delaware, the Arlon RCRA facility is located on Sassafras sandy loam soils with 2-5 % slopes that are moderately eroded (SaB2). The Sassafras series of soils consist of deep, well-drained soils on uplands of the Coastal Plain in the southern part of the county. Use of these soils is limited in areas with erosion hazards (Figure 12, Reference 11).

5.2 SOIL AND AIR TARGETS

The soil exposure pathway from the facility is limited to onsite workers, wildlife, visitors, and trespassers.

There is no data for air pathway targets within the four mile target radius.

6 SUMMARY AND CONCLUSIONS

The RCRA facility is located on 32 acres. The facility is located within one mile of three recharge areas. The nearest wellhead protection area is located 1.5 miles north. The closest municipal well is located in the north well field 2.0 miles north of the site.

Residents are less than 300 feet to the west of Arlon along Governor Lea Road and Rt. 7. The nearest surface water body is Doll Run located on-site less than 200 feet to the east of the plant. [redacted] There are no known State or Federally endangered species near the facility. The soil in this area tends to be a well drained sandy loam. These soils are considered an erosion hazard in areas with a 2-5% slope. The slope at Arlon is unknown.

It is the recommendation of the DNREC-SIRB that this site continue to be overseen and inspected by the DNREC Hazardous Waste Branch per RCRA Regulations. The DNREC-SIRB recommends No Further Action be taken under the HSCA Program regarding historical contamination at this site.

LIST OF REFERENCES:

1. Hendershot, K. D., DNREC-SIRB Computer generated map, 1998.

2. TRW Redi Map Co., Inc., 1996, Computer Generated.

3. United States Department of Commerce, National Oceanic and Atmospheric Administration, Climatological Data, Annual Summary of Maryland and Delaware, 1993, Volume 97, Number 13.

4. Raster Sure Maps, USGS Saint Georges 7.5 minute Quad, Computer Generated, March 1999.

5. Woodruff, K.D., Geohydrology of the Chesapeake and Delaware Canal Area, Delaware, Hydrologic Map Series No. 6, Delaware Geological Survey, 1986.

6. Water Resource Protection Areas (WRPA) for the City of Newark, City of Wilmington, New Castle County, Delaware 1993, Map 1 of 3.

7. US Geological Survey, Water-Data Report, MD-DE-96-1, Vol. 1, August 1997.

8. Flood Insurance Rate Map, Bear, Delaware, New Castle County, Community Panel Number 100025, Federal Emergency Management Agency (FEMA), April 1996.

9. Delaware Natural Heritage Program, Delaware Division of Fish and Wildlife, DNREC, 1998.

10. DNREC Water Resources, Wetlands, Computer generated, March 1999.

11. Soil Survey, New Castle County, Delaware, U.S. Dept. of Agriculture, Soil Conservation Service, October 1970.

12. Population

LIST OF FIGURES

LIST OF FIGURES

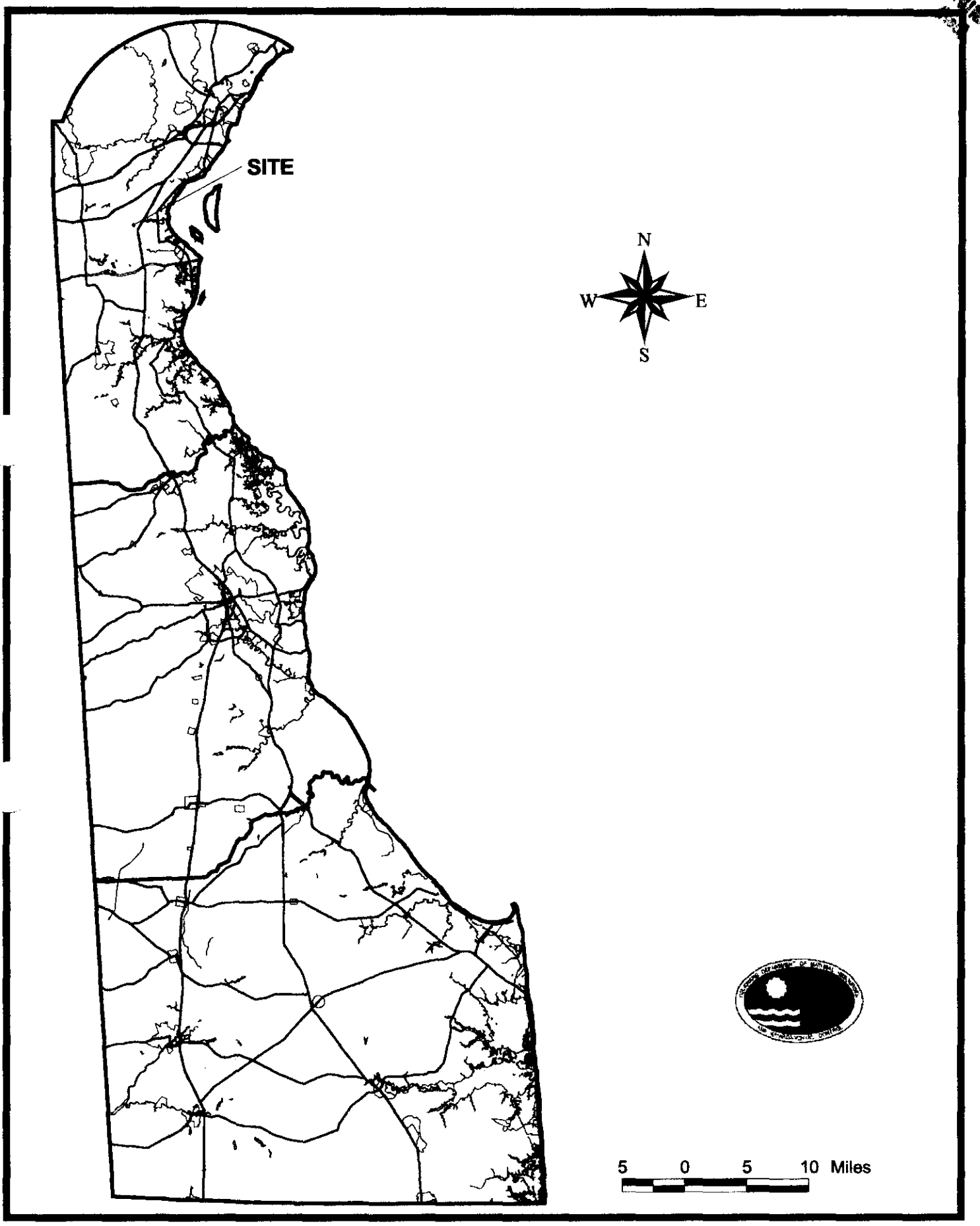

Figure 1: Location of the Arlon RCRA Facility in the State of Delaware

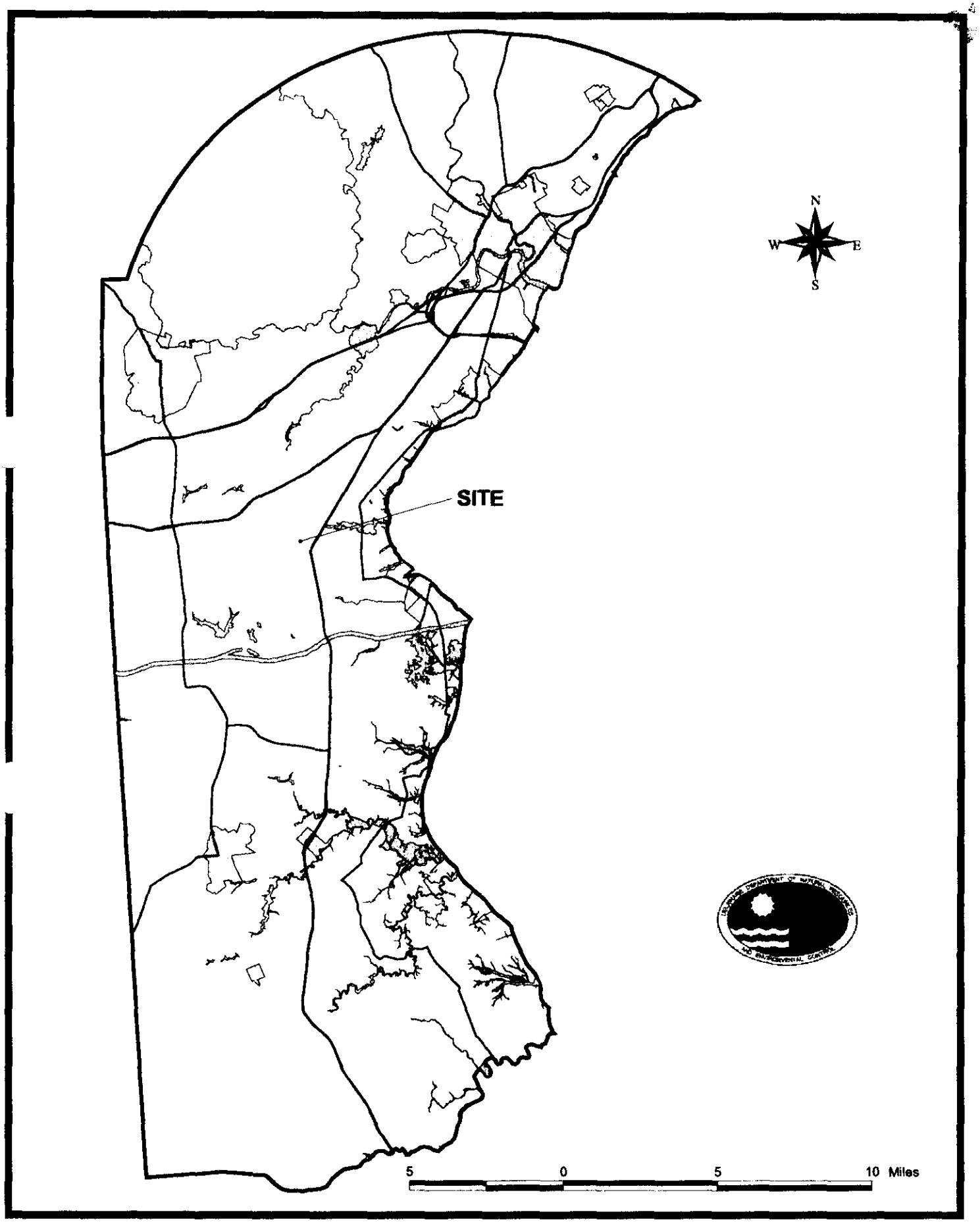

Figure 2: Location of the Arlon RCRA Facility in New Castle County

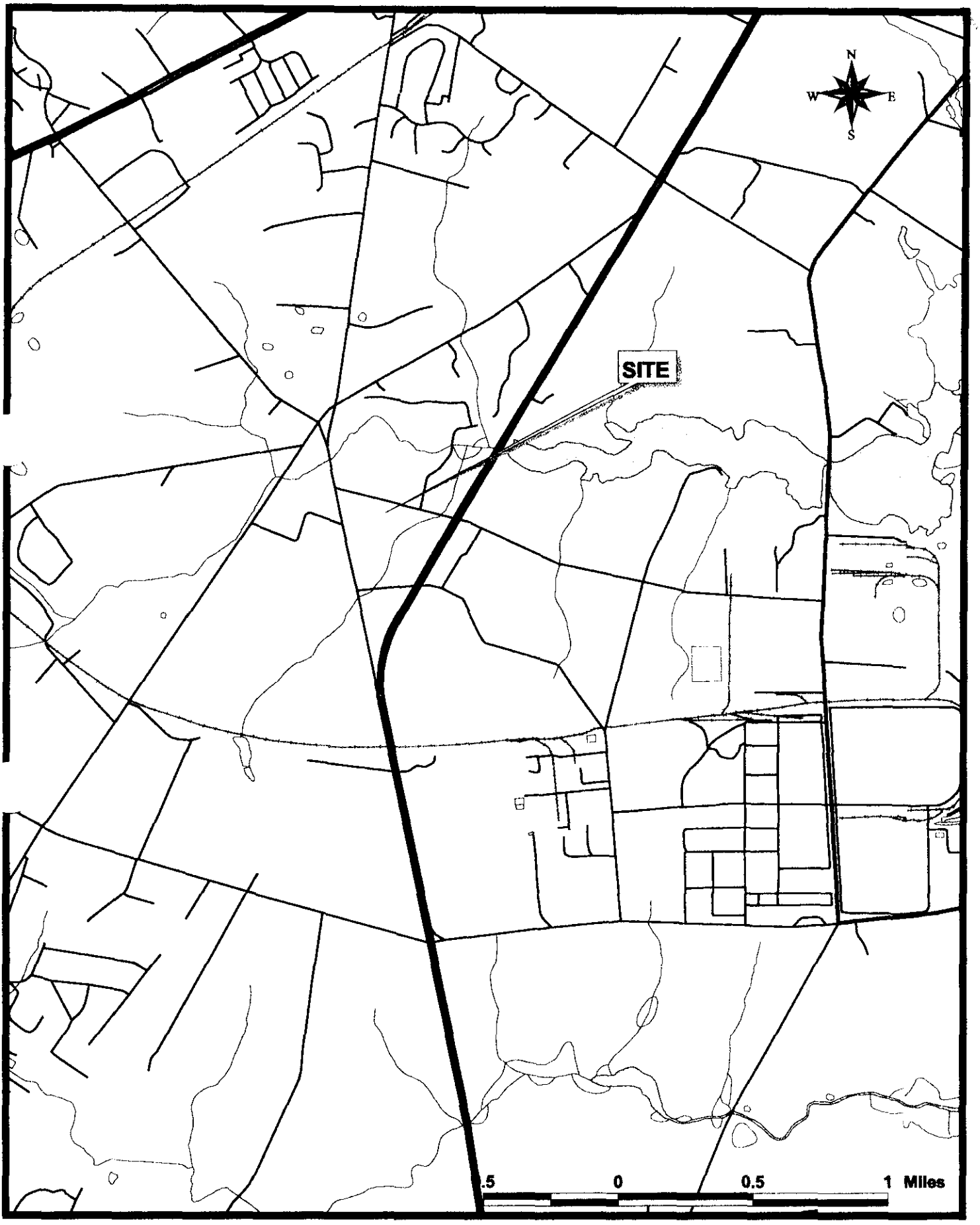

Figure 3: Location of the Arlon RCRA Facility at Saint Georges, Delaware

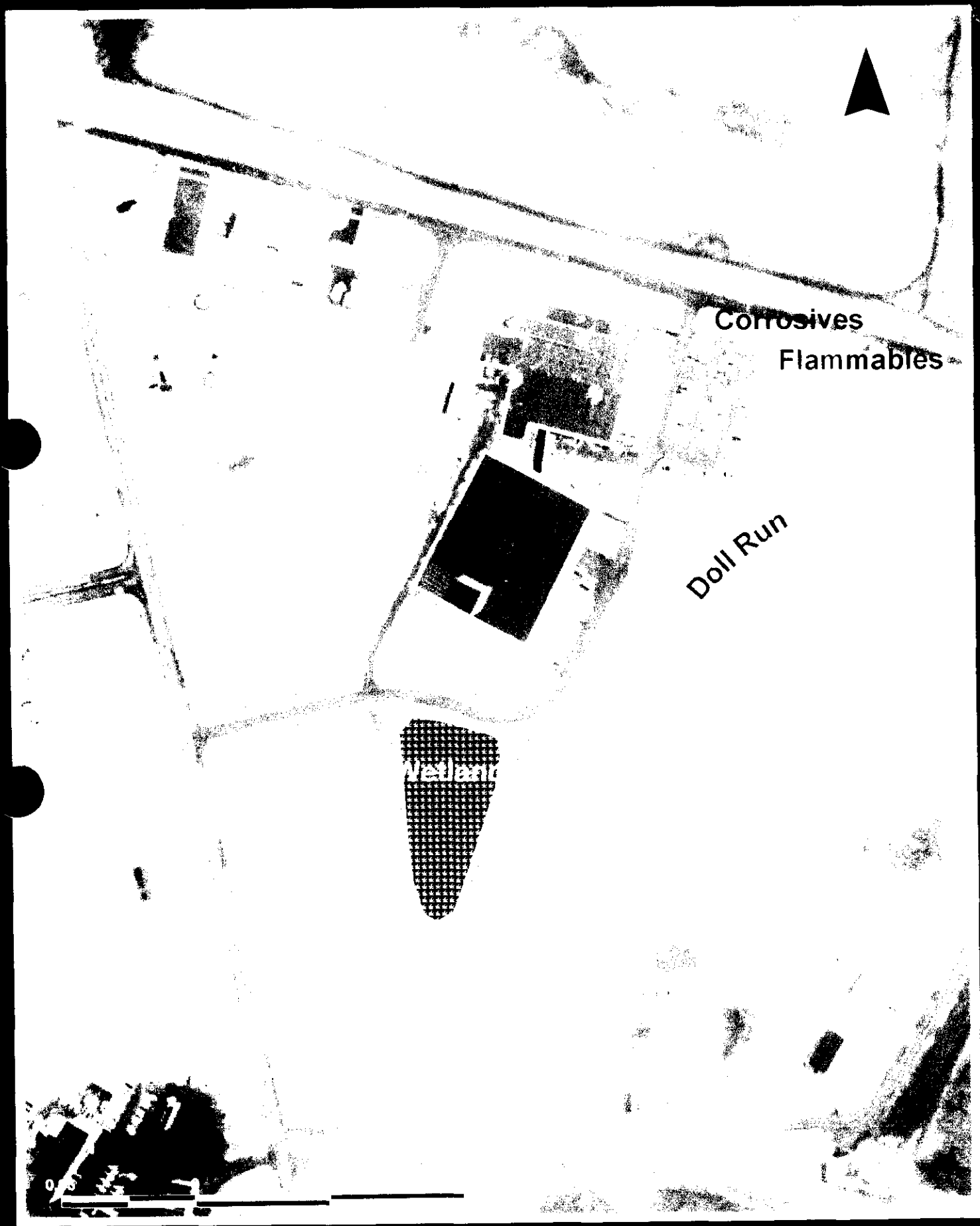

Figure 4: 1997 Aerial Photograph of the Arlon Property

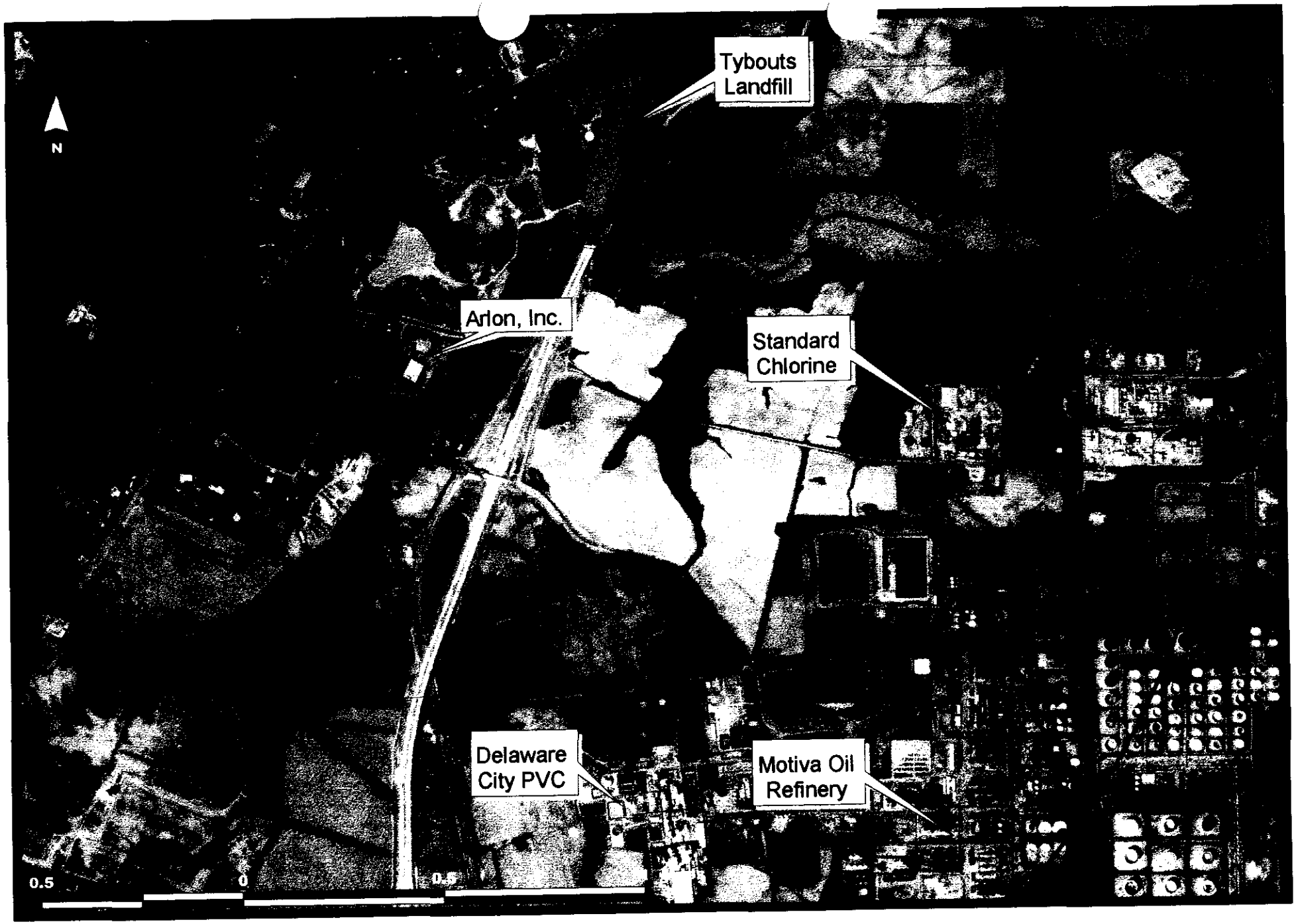

Figure 4a: Arlon and Surrounding Area

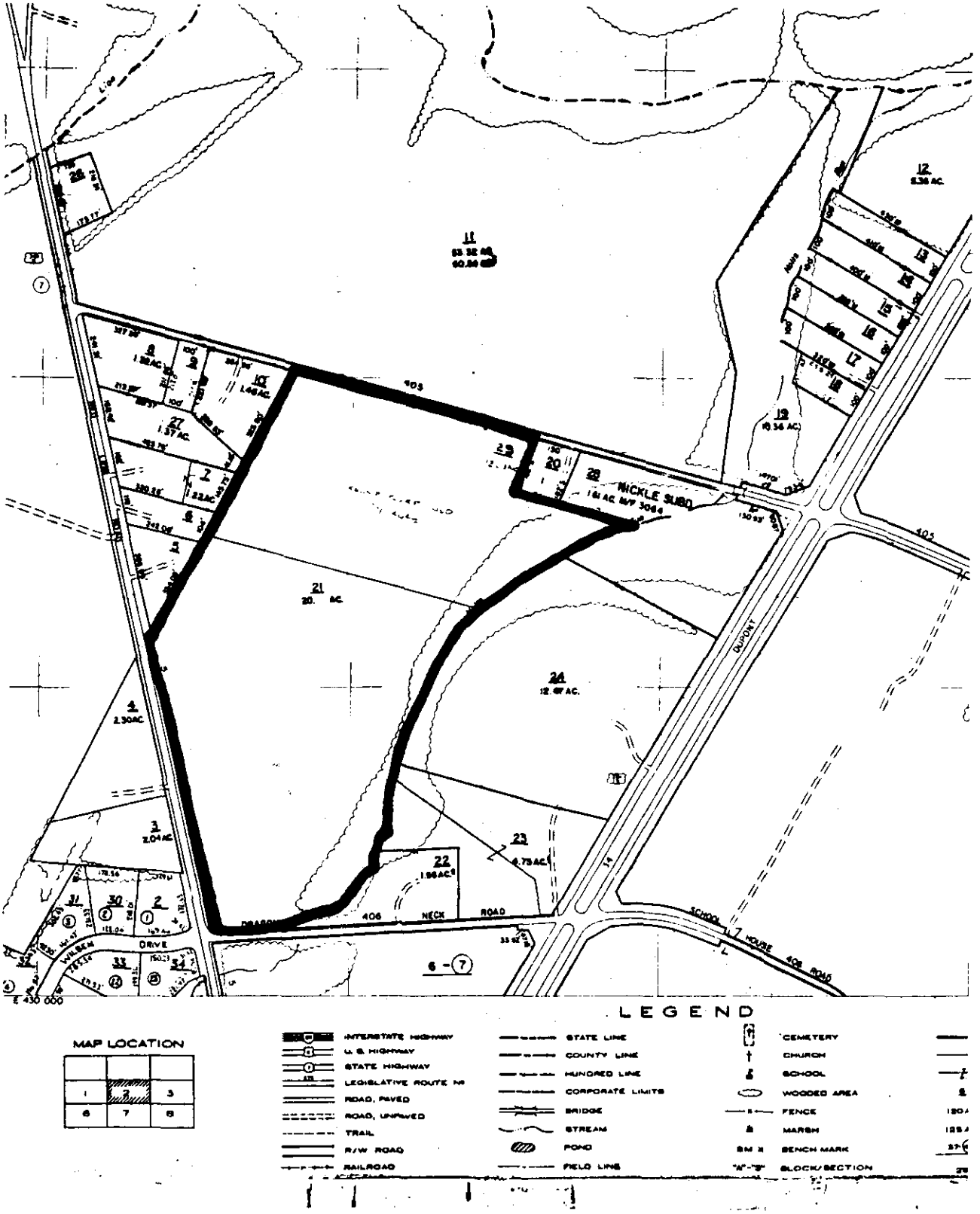

Figure 5: Arlon Inc., Tax Parcel Lots 12-002.00-021 and 029

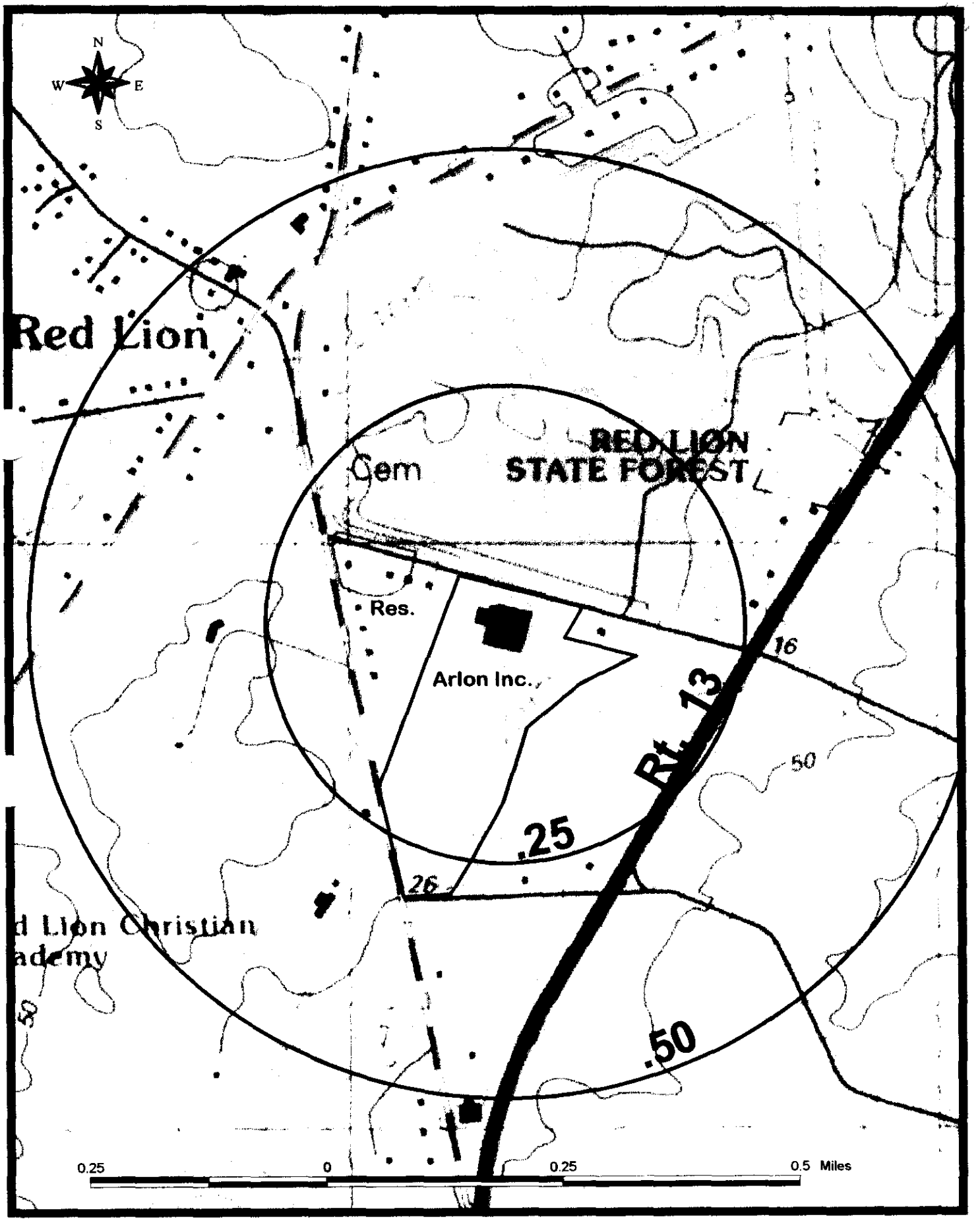

Figure 6: Site Location on the Saint Georges USGS 7.5 Minute Quad Map

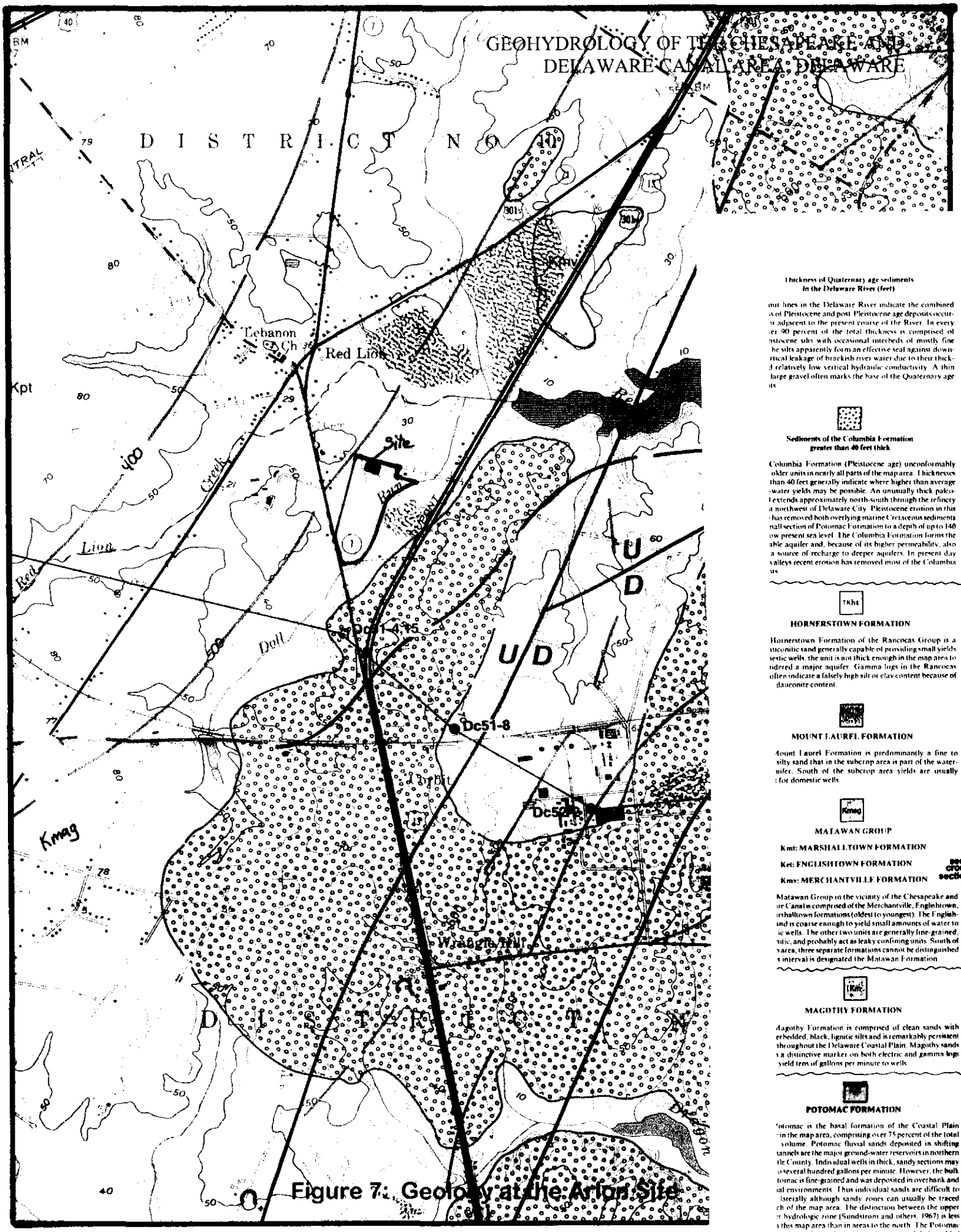

Figure 7. Geology at the Arlon Site

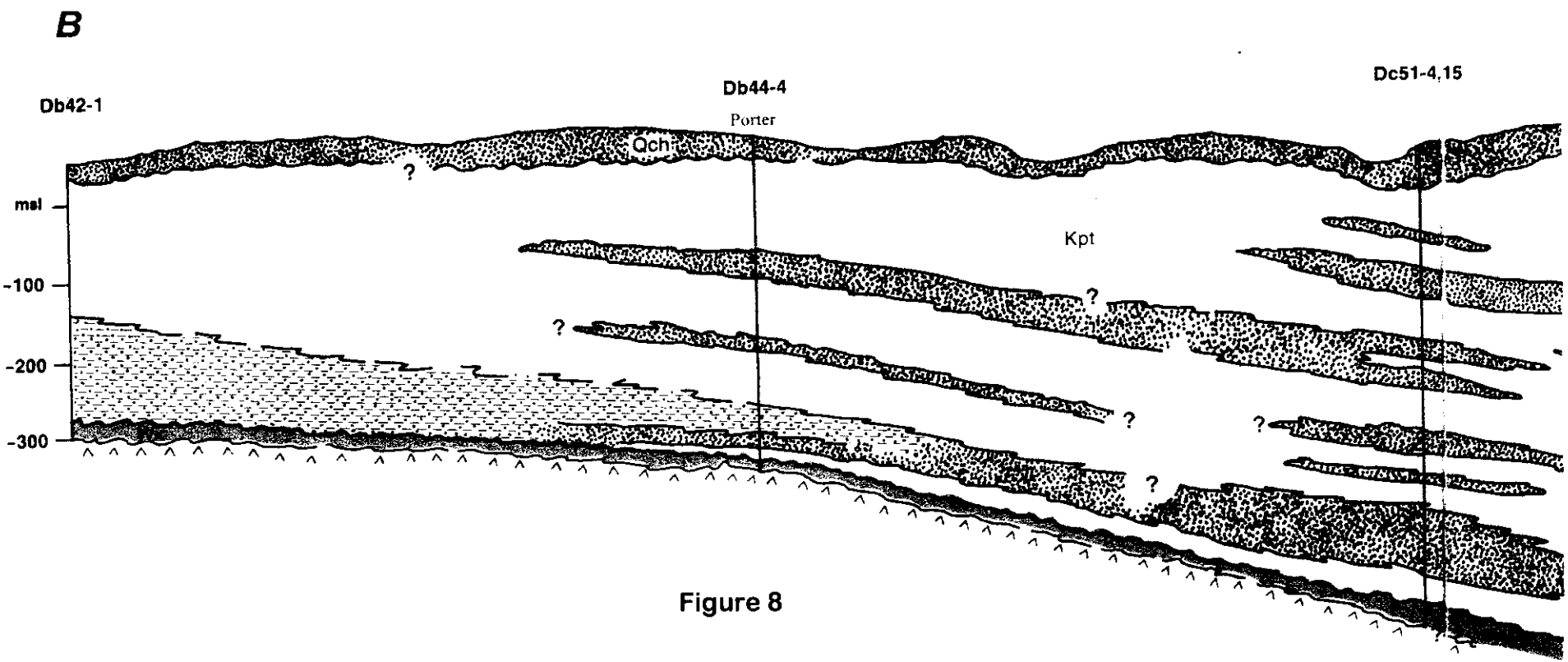

Figure 8

SCALE 1:24000

TOPOGRAPHIC CONTOUR INTERVAL 10 FEET

DATUM IS MEAN SEA LEVEL

GEOHYDROLOGY OF THE CHESAPEAKE AND DELAWARE CANAL AREA, DELAWARE

by

Kenneth D. Woodruff

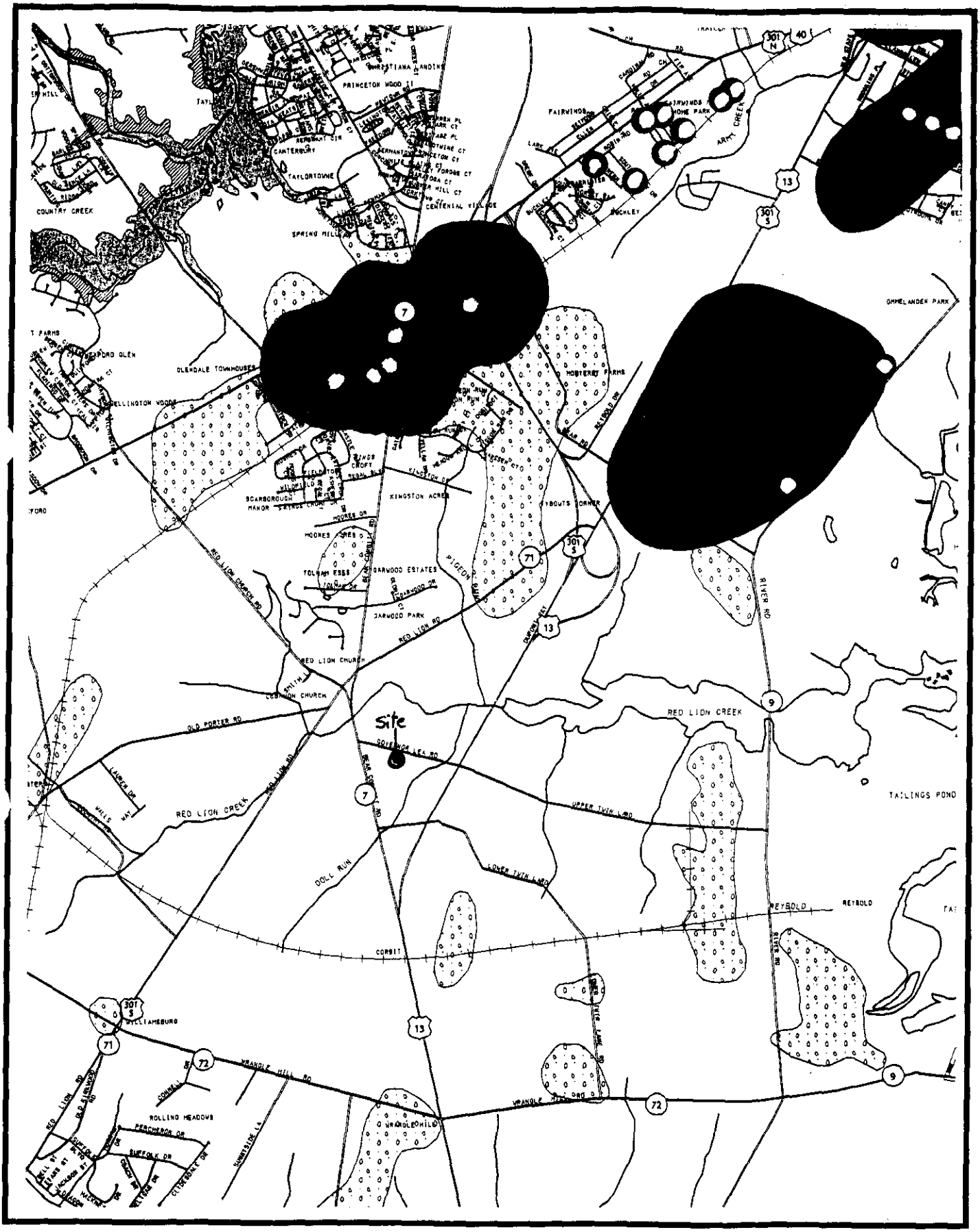

Figure 9 : Groundwater Recharge and Wellhead Protection Areas

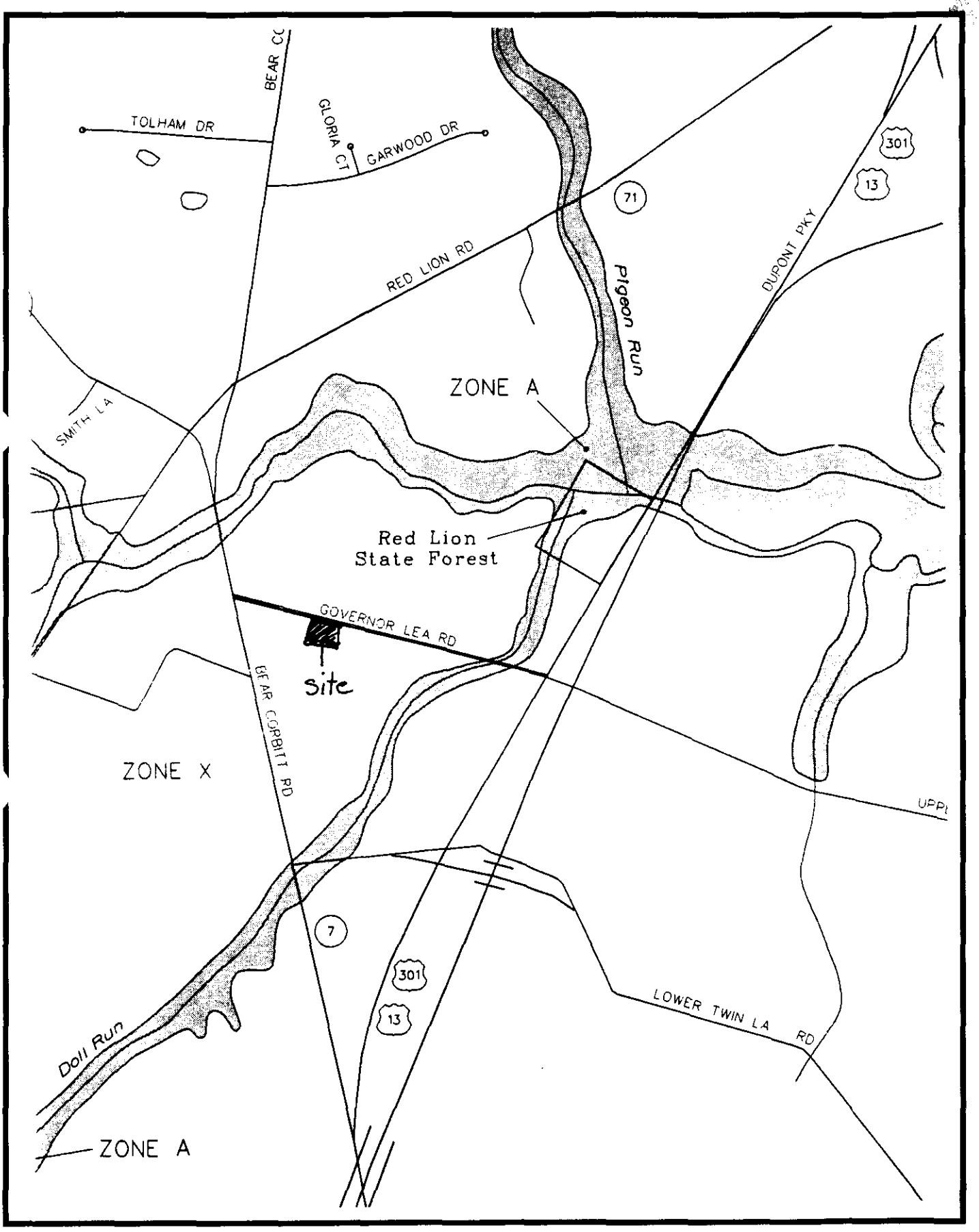

Figure 10: Flood Boundaries Around Arlon Inc.

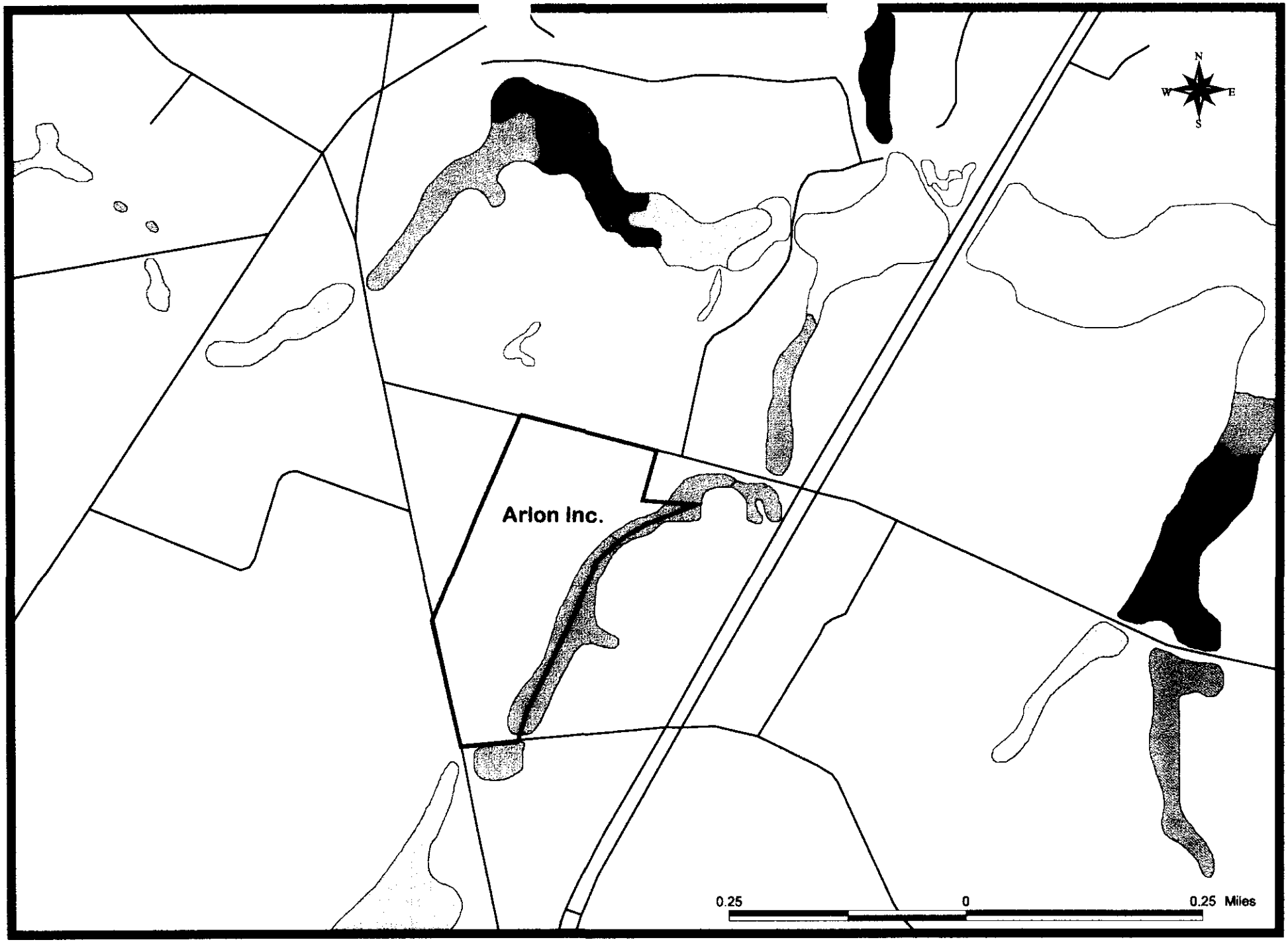

Figure 11: Wetlands Along Doll Run on the Arlon Property

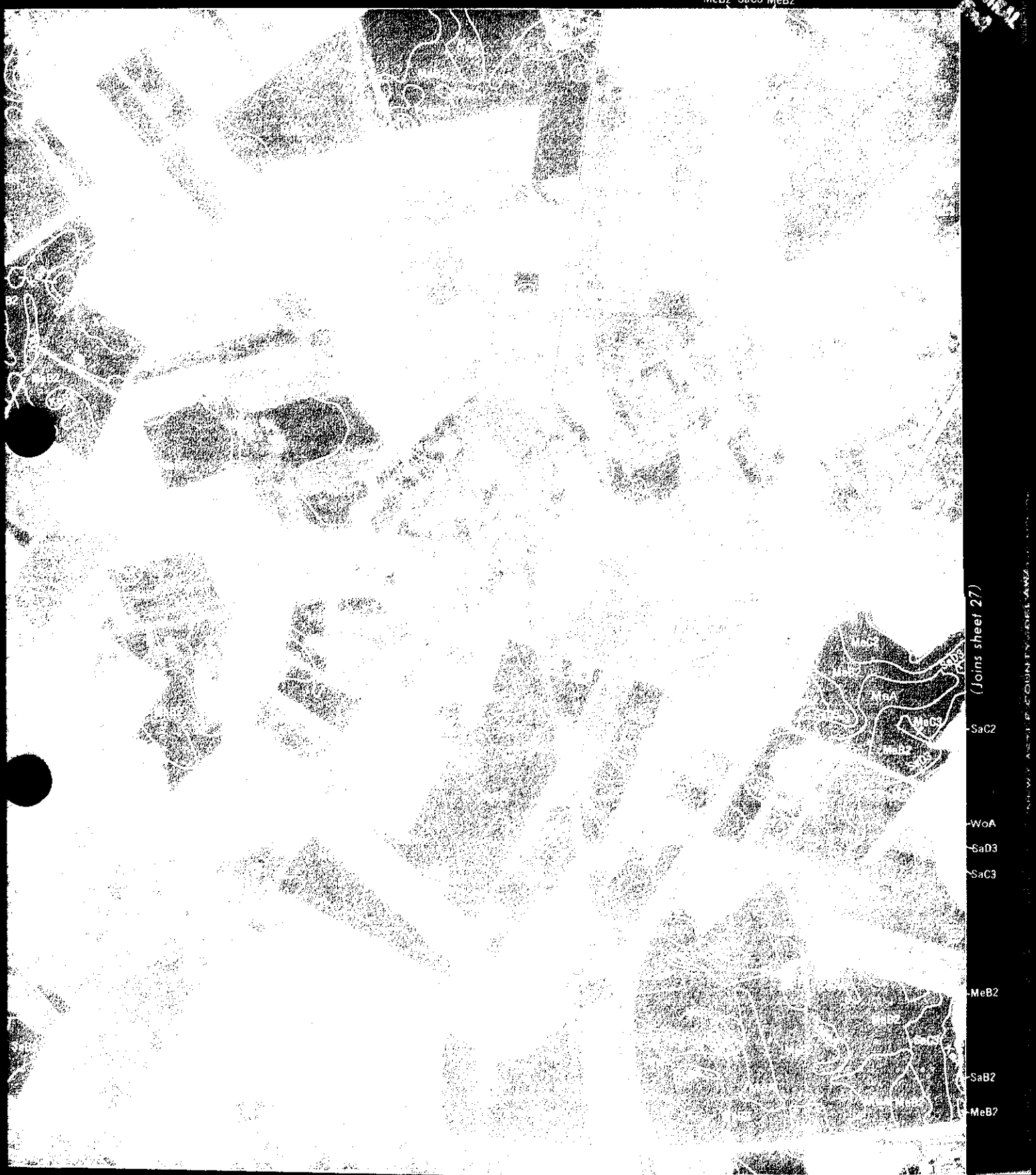

Figure 12: Soil Classifications at Arlon Inc.

LIST OF PHOTOGRAPHS

1. Hazardous Waste Storage Area
2. Flammable Waste Storage Area
3. Naphtha, Xylene, and Natural Gas Storage Tanks
4. Home 200 feet West of Holding Tanks
5. Doll Run and Wetland
6. Doll Run and Wetland
7. Doll Run
8. Wetland 200 feet South of Arlon

EPA REGION III
SUPERFUND DOCUMENT MANAGEMENT SYSTEM

DOC ID # 422281
PAGE # _____

IMAGERY COVER SHEET
UNSCANNABLE ITEM

Contact the CERCLA Records Center to view this document.

SITE NAME ARLON INC

OPERABLE UNIT 00

SECTION/BOX/FOLDER IC BOX1 1001

REPORT OR DOCUMENT TITLE Preliminary Assessment (cover letter attached)

DATE OF DOCUMENT May 6, 1999

DESCRIPTION OF IMAGERY Site Photos

NUMBER AND TYPE OF IMAGERY ITEM(S) 8 site photos

APPENDIX A

HAZARDOUS WASTE
COMPLIANCE ASSESSMENT REPORT

TO: Karen G. J'Anthony

FROM: Alan H. Simpson AHS 3/25/99

SUBJECT: CA at Arlon, Inc.

REFERENCE: DED980551261, FILE CODE: 21

GENERATOR SITE ADDRESS:	1100 Governor Lea Road Bear, Delaware 19701-1927
GENERATOR MAILING ADDRESS:	Same As Site Address
SITE REPRESENTATIVES:	Thomas Magnani, Engineering Manager, Microwave (January 25, 1999) Keith St. John, Engineering Manager, Silicone (January 25, 1999) Derek Miller, Process Engineer (March 1, 1999), (800) 635-9333
HWMB REPRESENTATIVES:	Alan H. Simpson and Donald K. Short
DATE OF ASSESSMENT:	January 25, 1999 and March 1, 1999
PURPOSE OF ASSESSMENT:	*Compliance Assessment*
CURRENT FACILITY STATUS:	Arlon is a large quantity generator based on 1997 manifests and the latest notification (2/15/90).

PRE-ASSESSMENT SAFETY PREPARATION

Based on review of my December 3, 1993 inspection memorandum, I determined that steel toed boots, a hard hat and safety glasses with side shields were adequate safety equipment.

FACILITY DESCRIPTION

The Arlon plant is located on Governor Lea Road, just west of Route 13, and on the other side of the highway from the refinery.

Arlon is in business of making two product lines: silicone rubber tapes and cloth (Silicone Technologies *Division) and sheets of circuit board materials (Materials for Electronics Division). Arlon's SIC code is 3061* - rubber and miscellaneous plastic products.

DESCRIPTION PROCESS AND WASTE GENERATION

Silicone Technologies Division

Silicone rubber, as received, is mechanically blended with fillers and pigments such as redoxide, to form what the company calls milled compound. Some of this milled compound is put through a heat extruder to make a self-fusing tape.

Other milled compound is softened by the addition of xylene and naphtha solvents to form what the company calls primer. Hazardous waste is generated by the cloth wipes used to clean-up equipment in the mix room where these solvents are added. The primer is mechanically impregnated onto continuous rolls of substrate mat, such as fiberglass, to make what the company calls coated stock. Coated stock is made in three coating lines: the Ross Tower Line, the Lakewood Line and a third line. Two of the three lines have calendaring areas at their ends. Calendaring adds more silicone rubber on to the coated stock. Hazardous waste is generated by the cloth wipes used to clean-up equipment in the calendaring areas.

Product descriptions and their uses are found on the internet site http://www.arlonstd.com.

Microwave Materials Division

Fiberglass mat is passed through a 20% teflon, 80% water bath in one of two coating lines - the Chesmont Coating Line or the Alsco Coating Line. Small amounts of titanium dioxide are added to the bath to increase the products dielectric constant. Each line has a heating zone to dry the mat.

In "build-up areas", the teflon impregnated fiberglass is layered with copper, and aluminum. These metals are put into place on top of the treated fiberglass in the clean room. The metals are pressed onto the fiberglass in either press #1 or in press #10 which are located in areas outside the clean room. Press #10 is operated under a minus 30 inches mercury vacuum and utilizes a hot oil/dowthem system.

The aluminum layer, which is only used as a smooth surface for the copper to be pressed against while in the press, is removed. Several laminate product areas use pure isopropyl alcohol wipe cloths for cleaning. Presently, the resulting spent cloths are disposed of as non-hazardous wastes. The ignitability of isopropyl alcohol most likely gives the cloths a hazardous characteristic. This procedure takes place in the metal prep, press #10 breakdown, press #1 breakdown areas.

The Microwave Division side also utilizes a copper etchant procedure. This quality control procedure etches the copper off test product laminates using an ammonium persulfate solution. Spent ammonium persulfate solution from this operation is the largest source of hazardous waste at Arlon.

Laboratories/Maintenance Shop

Other miscellaneous hazardous wastes are generated in the laboratories. There is also a parts cleaning station in the maintenance area. Spent solvent from this operation is accumulated in the 90 day hazardous waste storage shed for ignitables.

JANUARY 24, 1999 WALK THROUGH

Donald K. Short and I were accompanied by Thomas Magnani and Keith St. John in a walk through of the one continuous Arlon building and the outside areas:

Silicone Rubber Area

- Lakewood and new coated stock lines;
- calendaring areas;
- extruder to make self-fusing tape;
- mill room, which blends dry compounds into silicone rubber;
- Ross Tower room;
- silicone mix room, which mixes solvent into milled compound;
- product warehouse and slitting area;
- three oxidizers, one for each coated stock line (outdoors); and
- xylene and naphtha storage tanks (outdoors).

New Building (Microwave Side)

- Chesmont Coating Line, which makes coated stock;
- clean room where aluminum and copper sheets are mechanically placed onto coated stock (observed from outside the room);
- Press #1 and Press #10 where the placement done in the clean room is pressed permanently into position;
- water cooling towers for the presses (outside);
- press breakdown area;
- cutting area, where circuitboard laminate is cut into smaller pieces;
- metal prep area;
- Alsco Coating Line, which makes coated stock; and
- Etcher Area, which generates the spent ammonium persulfate.

Miscellaneous

- maintenance shop, which has a parts cleaning station;
- microwave QA laboratory;
- silicone QA laboratory;
- R&D laboratory;
- old loading dock where used oil is accumulated;
- waste ammonium persulfate accumulation area (see photograph and checklist); and
- waste solvent storage shed (see photograph and checklist).

USED OIL

On January 25, 1999, we found 8 drums of used oil accumulated at the old loading dock. These drums were labeled "WASTE OIL" and not "USED OIL".

LAND BAN

As part of the January 24, 1999 assessment of Arlon, we examined this company's shipping records for 1997 and 1998. Included with the record of each shipment of hazardous waste was either a notification or a certificate of incinerator destruction. The notification form satisfied the requirements of §268.7(a)(2) of the DRGHW.

POLLUTION PREVENTION

We discussed changing the type of solvents used on the cloth wipes in order to make the spent cloths non-hazardous.

CONCLUSIONS

One waste stream not managed as a hazardous waste, but having the potential to be one, was spent isopropyl alcohol cloth wipes used in three process areas.

VIOLATIONS

Those found corrected on March 1, 1999.

- satellite area for spent ammonium persulfate was not within operator's control - the satellite area has been eliminated; and
- labels "WASTE OIL" on "USED OIL" drums - labels have been changed.

Those found not to be corrected on March 1, 1999.

- amounts of hazardous wastes shown on 1995 annual report and 1995 manifests are different;
- no contact with outside emergency response groups;
- laboratory satellite area is not in the operator's line of sight;
- spent isopropyl alcohol wipes are thrown in the trash; and
- plastic drums for accumulating ammonium persulfate waste violate "CC" requirements.

ARLON
AHS:trh